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## AMERICAN PATENTS.

*List of American Patents which issued in June*, 1834. *With Remarks and Exemplifications, by the Editor.*

For *Zinc Cans for Cotton Roving;* William A. Crocker, Taunton, Bristol county, Massachusetts, June 3.

The patentee says, "My invention, or improvement, consists in the substitution of sheet zinc for tin plate, the material heretofore universally employed for that purpose. In all other respects, excepting in the material employed, the cans are similar to those now in use; and the manner of soldering the sheets together, of putting in the bottoms, and of strengthening them with rims, or hoops, is such as is well known to the workers in metals. What I claim, therefore, as my invention, is a *new manufacture* of cotton cans, by making them of sheet zinc, a material not before used for that purpose."

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For a *Chain Saw, for sawing timber*, &c.; Phineas P. Quimby, Belfast, Waldo county, Maine, June 3.

This is a saw which stands a fair chance of being unique in its character, as we are of opinion that not more than one of the kind will ever be brought into existence. It is to consist of links put together like the fusee chain of a watch, which links are to have teeth inserted into, welded, or otherwise affixed to them; these teeth are to widen at their points, to enable the saw to clear its way. The links are to form an endless chain, which is to pass over two pulleys, placed one above the other. The carriage that is to sustain the article to be sawed, has in it some novel contrivances, which are particularly described and claimed; as this part, however, is only of secondary consideration, we do not think it necessary to dwell upon it, viewing, as we do, the principal thing in the whole instrument, the saw, as utterly worthless.

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For a *Cooking Stove;* George J. Prentiss, Smithfield, Providence county, Rhode Island, June 3.

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For a *Machine for Manufacturing Horse Collars;* Ebenezer Whitney, Chenango, Broome county, New-York, June 4.

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For a *Triple Elbow, or Rafter Press;* Robert Bradley, city of Natchez, Mississippi, June 4.

This is a sort of toggle joint press, intended principally for pressing cotton, hay, or other articles into bales. The follower is to be brought down upon the bed-piece, by straightening the toggle joints, which straightening is to be effected by blocks and tackles, drawn tort by passing the end of the rope round a drum, or by other suitable means; but, however operated upon, the patentee "claims the exclusive privilege of working it."

We do not perceive any thing in the arrangement of this press, calculated to ensure a preference to it over many others already in use.

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For a *Thrashing Machine;* James D. Emes, Lansingburgh, Rensselaer county, New-York, June 4.

The claims set up in this case are to "the cast iron cylinder, with its bevelled beaters, as described, securing the operation of separating the straw in a shifting position, when under the operation of thrashing. Also, the concave commencing with a roller, which may, or may not, be dispensed with; and the slats or bars as described, to continue and finish the concave; and also the feeding motion, so far as the two rollers are

concerned, together with the free roller in the pitch board."

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For *Mills for Grinding Corn, or other Grain;* Samuel M. Handy, John Albee, and Enoch B. Cutts, Hallowell, Kennebec Co., Maine, June 6.

"A cylindrical stone," which *cylinder*, by the by, is the frustrum of a cone, about sixteen inches long, and fourteen inches in diameter at one end, by twelve at the other, is to be enclosed between two other stones, each of which is excavated, to receive one-half of it, and to admit the spindle by which it is to be turned. There is also an opening for feeding the grain, and another for the exit of the meal. Of the frame, we need not say any thing; there is nothing particular in its form or substance, all the presumed novelty in the machine consisting in "the peculiar form of the stones," which, with the "particular application of said stones, and their arrangement," constitute the claim.

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For a *Machine for Adding;* Daniel Kohler, Sunbury, Northumberland county, Pennsylvania, June 6.

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For an improvement in the *Manufacture of Oakum;* Ebenezer Cooke, and Selden Usher, Haddam, Middlesex county, Connecticut, June 7.

Oakum, it is remarked, has hitherto been manufactured from old junk, or rigging, or from new rigging, or yarns spun and tarred for that purpose; but the patentees state that they have discovered that the requisite quantity of tar can be incorporated with the fibres of tow, hemp, or flax, without the necessity of previously spinning it. The process consists simply in immersing the materials in a kettle of heated tar, and expressing the superfluous portion in a press of any construction. The patentees broadly "claim as their joint discovery and improvement, the principle, that the proper quantity of tar can be incorporated with the material of which oakum is intended to be made, whether hemp, flax, or tow, in its dressed state, without first twisting or spinning the same; whether effected in the mode aforesaid, or in any other manner."

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For improvements in the *Air-Pump;* Timothy Claxton, city of Boston, Massachusetts, June 7.

The patentee of this improved air-pump, is a manufacturer of philosophical apparatus in Boston, and on a visit to that city, about three months since, we had an opportunity of inspecting his establishment, and of examining many of the instruments made by him. It has been his aim to simplify the various articles which he makes, in order to supply the demand from academies and lyceums, at a price within the means of such institutions; and we were both gratified and instructed by the singular skill with which he has accomplished this purpose, without any sacrifice of utility. In several intances, we should have given the preference to the simple instruments of his make, as better calculated for the business of instruction, than the more complex and costly ones usually employed, and described in the books.

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For an instrument for *Supplying and Diffusing the Color used in Block-Printing;* James Rennie, Lodi, Bergen county, New-Jersey, June 9.

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For improved *Saddle-Bags;* Joseph H. Latouraudais, Flint Hill, Rappahannock Co., Virginia, June 14.

These saddle-bags are intended principally to contain the bottles, boxes, and instruments, used by physicians.

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For an improvement on the *Steam-Engine;* Sprague Barber, Providence, Rhode Island, June 14.

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For an improvement in the *Making of Glass or Sand-Paper;* Isaac Fisher, Jr., Springfield, Windsor Co., Vermont, June 14.

The machinery described is for the purpose of sizing and distributing the glass upon the paper; the main things claimed are the steaming the paper on the unsized side, which prevents its curling; and the manner of distributing the glass upon the sized surface, which is done by laying the paper upon an endless feeding apron, and passing it under a sieve constructed for the purpose, which sieve vibrates in a close box over the paper.

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For *Softening Glass Paper*, after the grains have been applied thereto; Isaac Fisher, Jr., Springfield, Windsor county, Vermont, June 14.

For an improvement in making *Glass or Sand Paper;* Isaac Fisher, Jr., Springfield, Windsor county, Vermont, June 14.

The improvement here made, consists in taking quartz rock, and grinding and bolting it in any convenient manner, without first calcining it, and using the same as a substitute for pulverized glass, or natural sand, in the manufacture of paper; a better article being thereby produced, from the greater hardness of the material, and the consequent durability of the angles.

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For an improvement in *Making Glass or Sand Paper;* Isaac Fisher, Jr., Springfield, Windsor county, Vermont, June 14.

This patent is taken for an apparatus used for sizing the paper after it has received the glass, or sand. A wooden roller, covered with felt, is to revolve over a pan containing heated size, its lower side wadding therein; the superfluous quantity which it thus receives is pressed out by a metallic roller, as the felt rises from it. The paper, placed upon a sizing board, is then passed between another metallic, and the felted roller, the grained side of the paper being placed in contact with the felt.

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For an improvement in the *Power Loom;* James C. Kempton, Manayunk, Philadelphia county, Pennsylvania, June 14.

In the weaving of stripes in the ordinary power loom, the width of each stripe is governed by the number of the throws of the shuttle, and in case of the breaking or running out of the weft, the shuttle still goes on, and is replaced by another when it has counted its number, rendering the stripe, in such case, narrower than it ought to be. The object of the present invention, is to remedy this defect, by causing the change of shuttle to be independent of the number of throws, and governing it by the actual width of the stripe. The arrangement by which this effect is produced, is not given so much in detail as it ought to have been, for want of a more complete drawing; but the general principle is distinctly set forth. On the one end of the cloth beam, there is what is called a pattern wheel, which revolves with the beam, and has on it cams, which are made to act upon the levers which raise the shuttles; and as these cams operate only by the turning of the pattern wheel, the shuttles cannot be changed until a certain width of cloth is wound thereon: the same shuttle, therefore, may be thrown any number of times, if empty, as the beam will not move. The claim is, to "the method described of changing the boxes, independent of the number of throws of the shuttle, by means of the stripe actually woven."

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For improvements in *Locomotive Engines, Cars, and Carriages,* used upon Railroads; Alfred C. Jones, city of Philadelphia, June 14.

The improvements claimed under this patent are three in number. The first consists in the application of what is called a false flanch, to obviate the difficulty resulting from the rapid wear of the tire, where the tread and flanch come in contact with the rail. When this has taken place, the wheel is to be turned in a lathe, to adapt it to the receiving of the false flanch, which is to be riveted on, in a manner shown in the drawings.

The second relates to the apparatus for supplying water from the cistern of the tender, to the boiler. This consists in the substitution of metallic tubes for the hose commonly used, which tubes have ball and socket joints, or others, admitting of a ready motion in all directions. The patentee says, "I do not in this part claim to be the inventor of flexible metallic tubes, such as I have described; but what I do claim is their adaption to, and employment in, locomotive carriages and tenders, for the purpose of supplying the engines with water."

The third improvement is in the oil cup, or cyphon, which is used for oiling the machinery, and consists in the manner of confining the lid thereof by means of a spring, instead of by sliding, or screwing, as is most commonly done. The mode of applying the spring is represented in the drawing, and its application is claimed.

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For a *Machine for Drawing in Perspective;* Richard Lyons, New-Rumley, Harrison county, Ohio, June 14.

A machine perfectly similar in principle was patented by I. Todd, A. Day, and W. Bache, on the 15th of June, 1803, excepting that it was intended for taking profiles only; it was applicable, however, to the drawing in perspective, and was repeatedly so applied.

In the eighth volume of the Transactions of the Royal Society, under date of July 21st 1673—that is, 160 years ago—an in-

strument exactly the same in principle with the foregoing, is described, under the title of "*Modus novus delineandi per radios parallelos ad aecqualitatem orthogrophicam, gestus, situs, habitusque quoscunque humani corporis, servata symmetria, proportione que partium.*"

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For *Machinery to supersede the use of Steam in propelling, &c.;* Louis Marchand, city of Baltimore, June 14.

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For *Springs for Rail-road Cars;* Ross Winans, Civil Engineer, city of Baltimore, June 14.

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For a *Plough;* Shem Zook, Armagh, Mifflin county, Pennsylvania, June 14.

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For a *Method of Grinding and Polishing Marble, and other Stones;* Samuel Risley, city of Philadelphia, administrator of Richard S. Risley, deceased; June 14.

A wheel of cast iron, grindstone grit, or other material, is to turn horizontally, like a lapidary's wheel; but it is to be made sufficiently large to grind such pieces of marble, &c., as may require it; any of the ordinary substances used in grinding are to be applied to the wheel. For polishing, one of wood, covered with cloth, may be employed.

"The improvement claimed consists in the method of grinding, smoothing, and polishing, marble or other stone, as above described, whereby a great saving of time is effected, and a true surface, and superior polish, is given to the marble or stone."

This patent is taken for a "method of grinding," and not for the machine, or apparatus, by which it is effected. A method, according to our view of the subject, is not one of those things included in the patentable subjects enumerated in the patent law. Where an operation, such as grinding or polishing, is performed by means of a machine, if the machine is not new, there is nothing to patent.

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For an improvement in the *Forge Hammer Arm;* James Sharp, Spruce Creek, Huntingdon county, Pennsylvania, June 14.

This patent is taken for a *tappit arm*, or lifter, which is to be affixed into a cylinder, to raise the handle of the tilt hammer. This tappit arm is to be in part of cast iron, and in part of wood, and it is claimed "as described," which description is not such as to enable us to perceive what are the advantages anticipated from its use, nor indeed fully to understand its construction.

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For an improvement in the *Constructing or Building of Canal Boats;* John M'Causland, Kingston, Ulster county, New-York, June 14.

That boat-builders may judge of the novelties introduced into the construction of this boat, we will give an abstract of the specification, there being no claim.

The bilge, from stem to stern, is to be of solid, square stuff, the size depending, of course, on that of the boat. The floors are to be joined to these timbers by dovetails, or mortises. The bilge timbers are to be rebated, to receive the plank on the sides and bottom, which are to be fastened by bolts. The keelson and keel are to intersect in the bilge timbers, fore and aft the boat. Plank, shears, &c. &c., to be used as necessary.

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For an *Elastic Water Dress;* Leonard Norcross, Oxford, Dixfield county, Maine, June 14.

A dress is to be made of India rubber cloth, or any similar material, with a suitable cap for the head, furnished with strong glass to see through. There are to be tubes for the supply and discharge of air, &c.

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For an improvement in the *Cotton Gin;* Jacob Perkins, Bridgewater, Plymouth Co., Massachusetts, June 14.

This patent is obtained for a mode of adapting a moveable seed-board to the cotton gin, so that it may be readily adjusted in any required direction, and the claim made is to the particular mode of adjustment.

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For a *Guard to prevent Water from beating under doors;* Daniel Bulkeley, Hampton, Windham county, Connecticut, June 14.

The specification of this patent is very brief, informing us, merely, that the door guard consists of a trough, or channel, which is fixed at the lower end of the door, extending across its whole width; which trough may be made of wood or metal, and is to receive the water as it trickles down the door; it is also to be continued across the threshold, so as to carry the water off to the ground.

For a *Machine for Cutting and Cradling Wheat;* Bernard Jackson, Brown county, Ohio, June 14.

The description of this machine is not very clearly written, but the drawing being well executed, its construction may be collected from the two together, although, without the latter, we can give but a general idea of it.

The machine is to run upon four wheels, two of which are coupled on that end of it to which the horse is attached, and the other two at the hind, or operating end. These latter wheels are made rough, to take hold of the ground, and have bevelled teeth on them to gear into a bevel wheel upon vertical shafts; one of these vertical shafts carries four scythes, standing out at right angles from each other; above these scythes there are fingers upon the same shaft, to collect the grain. On the opposite vertical shaft, there are what are called discharging arms, which are to deposite the grain, as it is cut, behind the left side of the machine. The claim is, to this combination of machinery, for cutting grain.

However good this apparatus may prove in certain situations, like other mowing machines, it can be used only upon such land, the surface of which is uniform, and clear from stones and stumps.

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For a *Machine for Sawing Wood for Fuel;* Harlow Mitchell, Rutland, Jefferson county, New-York, June 14.

This machine, as described, is to be attached to a common saw-mill, so as to work a cross-cutting saw by the ordinary power of the mill, and to use the ordinary carriage for moving the log, so as to bring it crosswise against the saw. The saw, and indeed the whole apparatus, is so made that it may be attached and removed at pleasure.

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For the *Frame-Work of Mills;* William S. Parham, Sussex Co., Virginia, June 14.

The specification of this patent consists of a number of particular directions respecting the manner of forming and keying the joints, in framing the upper story of a mill; and also the manner of placing the braces, and flooring joists, and of supporting the latter from the roof above them. We are unable, however, to deduce therefrom any thing new in principle, or superior in practice, to what is already known. The patentee says, "My claim is to the manner in which the frame-work of the upper story is put together and secured, as above described, and particularly the manner in which the king-posts support the joists at the lower end of said posts; also the manner of securing the girders to the joists; and to the suspension posts as depending from the joists above, in order to support the weight of the gearing working from the power wheels."

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For *Metal Combs;* Allen Porter, Hartford, Hartford county, Connecticut, June 14.

The back of the comb is to be made of a rod, or bar, of any kind of metal, which is to be drilled, so as to receive the teeth; when these have been inserted, the bar is to be compressed, so as to keep them firmly in their places; or, the holes being sufficiently small, the teeth are to be driven in so as to be firmly fixed.

"The improvement claimed is in the fastening the teeth, without soldering or riveting, by putting them into the back, so as to have the back smooth, without having the teeth come through the back of the comb."

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For an improvement in *Windlasses for Vessels;* Leonidas V. Badger, and Richard Walker, Portsmouth, Rockingham county, New-Hampshire, June 17.

The improvement consists in the application of double palls to a ratchet wheel, or a ship's windlass. A horizontal lever is hung on its centre, above the windlass, and two palls, one from each side of the centre pin, fall into the teeth on the same side of a ratchet wheel, fixed upon the windlass; and, consequently, whichever end of the lever is depressed, the ratchet wheel will be forced round. The claim is to "the application of the above form and power to ships' windlasses, for raising anchors, &c."

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For a *Machine for cutting Hay and Straw;* Barnabus Davee, Leeds, Kennebec county, Maine, June 17.

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For improvements in the *Power Loom;* Aden Holbrook, and Benjamin F. French, Dunstable, Hillsborough Co., New-Hampshire, June 17.

The specification of this patent refers throughout to the accompanying drawings, which are very perfect, and are necessary to a complete understanding of the things claimed. The improvements made are three in number; the first "is a stop motion, by

means of which the loom is stopped of itself, whenever the filling, from any cause, is not thrown into the warp." "Whenever the threads of the warp adhere closely together back of the lese rods, the rods are drawn out of their place towards the harness, by which means defects are produced in the cloth, called draws. In order to give notice to the weaver before any injury arises from this cause, another stop motion has been invented by us, which is the second improvement upon the said loom claimed by us as our invention." "A let-off motion, whereby equal quantities of warp, whenever cloth is made, are unrolled from the yarn beam in equal periods of time, is the third improvement upon the said loom which is claimed by us as our invention. By means of it, cloth of a uniform thickness can be made; it is described as follows," &c.

We have thus indicated, in the words of the patentees, the object of their improvements, which is all that we can now do.

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For a *Churn;* John Broom, Hallowell, Kennebec county, Maine, June 18.

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For a *Water Wheel;* Henry Averill, Richland, Oswego county, New-York, June 18.

This is an undershot wheel, to be used in streams where there is but little head and fall. Particular admeasurements are given in the specification, but these we need not notice. The buckets, or floats, are hinged upon the arms, or rims, of the wheel, the hinge being at the lower edge of the bucket as it enters the water; the buckets, therefore, stand in the usual position, bearing against the radiating arms whilst they are entering, and are subjected to the force of the water; but as they begin to rise from it, their hinges admit of their taking a direction which will enable them to leave without lifting it, hanging off from the arms until carried up to the top of the wheel, when, by their own gravity, they fall against them, and are so sustained until they again leave the water. The patentee avers that, after the experience of a year in the use of such a wheel, he is convinced that much power is gained, which, in the ordinary construction, is wasted by the lifting of the bucket, particularly where there is back water. There is no claim made, but the particular object of the invention is sufficiently distinct, and it differs essentially from the hinged buckets which have been so frequently essayed in running streams; we think also that it offers some advantage from the cause stated by the patentee, whilst there is little or no objection to the hinges on the score of complexity.

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For a *Thrashing Machine;* John Melvin, Readfield, Kennebec Co., Maine, June 18

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For an improvement in the *Machine for Spinning Wool;* Asa Campbell, Kingston, Luzerne county, Pennsylvania, June 19.

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For a *Pneumatic Breast Pump;* James P. Stabler, Sandy Spring, Montgomery county, Maryland, June 19.

A glass vessel, having two openings into it, is, in order to its producing the intended effect, to be exhausted of its air by the action of the mouth. One of the openings is to be applied to the breast in the usual manner, and the other is to have a cap cemented on to it, to receive the end of a flexible tube, the outer end of which is to be applied to the mouth. A valve is contained within the juncture of the flexible tube with the cap of the glass vessel, which valve, of course, opens upwards; the construction of it is particularly explained, but is spoken of as susceptible of variations. Through the cap there is a small opening, which is to be covered by the finger whilst the instrument is in use, the withdrawal of the finger allowing it to be removed readily from the breast.

"The improvements claimed are, the application of a valve to the pneumatic breast pump, in which the vacuum is formed by the mouth of the operator; and the perforation of the cap, or vessel, by which means the external air may be admitted to diminish the drawing power of the instrument, when painful to the patient, and by which the operation may be immediately suspended without inconvenience."

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For a *Cooking Stove;* Philo P. Stewart, Elyria, Lorain county, Ohio, June 19.

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For a mode of *Increasing the adhesion of the Driving Wheels in the Locomotive Steam Engine;* Ezra L. Miller, city of Charleston, South Carolina, June 19.

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For an improvement in the *Manufacture of Vinegar;* Edward Clark, Saugerties, Ulster county, New-York, June 19.

For a *Self-acting Clock Alarm;* Otis N. Angell, Johnston, Providence county, Rhode Island, June 20.

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For a *Reaping Machine;* Cyrus H. M'Cormick, Rockbridge county, Virginia, June 21.

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For an improvement in *Steam Boilers;* Benjamin Phillips, city of Philadelphia, June 21.

This improvement is said to consist in "a mode of determining or defining the water line, or height of water, in steam boilers." The method proposed is to connect a vertical tube to one end of the boiler, by means of two lateral tubes, one opening into the water, and the other into the steam chamber, in the manner of the glass gauges sometimes used for that purpose, especially in France. The lateral tubes are to be furnished with valves, and the vertical tube is to have a cap, which may be removed at pleasure. To use this appendage, the cap is to be closed, and the two valves in the lateral tubes are to be first opened, and then closed, which will allow the water in them to stand on a level with that in the boiler. The cap on the vertical tube is then to be removed, in order to gauge the height of the water within it.

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For a *Washing Machine;* Jotham Chase, Waterboro', York county, Maine, June 23.

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For machinery for *Napping and Steaming Woollen and other Goods;* Stephen R. Parkhurst, Providence, Bristol Co., Rhode Island, June 24.

This machine has cylinders, so arranged in and above a copper kettle, containing water heated by a furnace, that on turning the respective cylinders by proper gearing, the cloth, attached to aprons on two of the cylinders, may be passed backward and forward, in a state of tension, through the heated water, one roller within the kettle, depressing it for that purpose, whilst napping cylinders, furnished with teazles, or cards, operate upon the cloth.

There are several things claimed, of which the following is an abstract. The tightening of the cloth, so as to preserve a uniform strain, by the arrangement of the cylinders. The arrangement for passing the cloth into the heated water, and presenting it to the napping rollers, thereby securing all the advantages of the steaming process. The rendering the cloth by this process, glossy, and free from wrinkles. The method of drawing the nappers either on or off the cloth, and the rack and pinions for raising the small frame out of the kettle.

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For a *Horse Power;* William Burk, Whitemarsh, Montgomery county, Pennsylvania, June 25.

This horse power is the common moveable floor, revolving round two drums, with so little variation from those in common use, that we do not know, and the patentee does not tell us, in what the invention consists.

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For *Lever Valves for exhausting Air and Water;* Hiram Strait, East Nassau, Rensselaer county, New-York, June 25.

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For improved *Medicated Liquid Magnesia;* Richard Jordon and Matthew Anderson, city of Philadelphia, June 25.

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For an improvement in *Inclined Planes for Rail-Roads;* Levi Burnell, Elyria, Lorain county, Ohio, June 26.

"This improvement, for enabling locomotive engines to ascend inclined planes, with their full complement of wagons, without the intervention of stationary engines and their appendages, consists simply, 1st. In the use of an additional rail or rails placed parallel, and near to, but more elevated than, the track of the way to which the improvement is applied. 2d. In the application of a wheel, or wheels, with peripheries of smaller diameter, in connexion with each of the ordinary working or bearing wheels of the locomotive carriage."

Those who are acquainted with the proposed improvements on rail-roads, will perceive that the plan before us is but a new edition, without additions, of what has been before done. The often proposed formation of teeth upon the rail, and smaller wheels, to prevent slipping, are also alluded to by the present patentee. In vol. 8 of this Journal, p. 22, there will be found a specification of a patent "For locomotive carriages, and rail-roads, adapted thereto," obtained by Emmor Kimber, in which all the above proposed improvements, with some others, are included. For some of them, we might go still farther back.

For an improved *Saw-Mill;* Asa Ransom, Jr., Clarence, Erie county, New-York, June 26.

A mill-saw is to be hung in the ordinary way, but it is to have teeth on both its edges. The head blocks are to be so constructed as to admit the board to be sawed entirely off, leaving no stubshot. There must be two feed hands, and two rag wheels, to move the carriage in either direction. The specification is very brief, and does not describe the respective parts with any clearness, while the drawing is altogether inadequate to supply the deficiency. This, however, is of the less importance, as in a patent obtained by Mr. Joseph Newton, of Monroe county, New-York, on the 1st of October, 1830, an account of which is given at p. 10, vol. vii., it will be seen that "the improvement proposed is to have teeth on both edges of the saw, and to construct the mill in such a manner that the log may be sawed in passing either way. There are to be two feed hands, and two rag wheels, operating in reversed directions."

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For a *Machine for Spreading Hay, &c.;* Joab Centre, city of Hudson, Columbia Co., New-York, June 27.

A frame, fixed upon wheels, is to be drawn by a horse; a shaft crossing this frame, and revolving upon gudgeons, is to have rods, or long teeth, projecting from it, so as to reach within an inch or two of the ground. A band from one of the wheels passes round a whirl upon the shaft, causing it to revolve rapidly as it is drawn along, and consequently to scatter the mowed grass which is to be made into hay.

There is no claim made.

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For improvements in the *Machinery for Manufacturing Wood Screws;* Rufus C. and Clement O. Reed, Worcester, Worcester county, Massachusetts, June 28.

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[Translations from Foreign Journals, for the Journal of the Franklin Institute.]

## *Methods of Tanning Skins and Hides, by using Liquor of Tar, and of Soot.*

In compliance with requests which have been made to us, we offer to our readers two processes for tanning, by means of the liquors of tar, and of soot, varying a little in their form; the ingenious workman will be able to avail himself of whatever may be useful in the two methods.

### PROCESS OF WILLAIREBERRES.

### *Preparation of the Tar Liquor.*

Throw about eighteen or twenty pounds of good tar into one hundred gallons of boiling water, add a sufficiency of lime to form a thick paste, then pour cold water upon this composition, that the lime may be converted into powder; add again about a bucket of tar, and an equal quantity of powdered lime, and stir the whole well till you obtain once more a thick paste.

The whole composition is distributed into several vessels, or vats; boiling water is then poured into the vats, taking care to stir the composition with a shovel, three or four times, whilst pouring it in. As soon as the water is mixed in the vats, these vessels are covered, and, twenty hours afterwards, the liquor may be used.

### *Preparation of the Liquor from Soot.*

Put into a boiler, for every hundred pounds of soot, sixty gallons of boiling water, and four pounds of lime in powder, taking care to stir the whole three or four times with a shovel, while filling the boiler; then cover the boiler, and at the end of twenty-four hours, you may make use of the liquor it contains, after having filtered it in a bucking tub pierced with small holes, and filled with fine sand: the clearer this liquor is, the better.

### *Preparation of Skins intended for prepared, or glossy Leather.*

The skins thus prepared are put into cold vats of gallic acid, and boiled bark of oak, in which they remain four or five days, and even a week; after which, they are taken out, and steeped in the vats three or four times daily; they are then put in warm liquor of tar, diluted with an equal quantity of water, and the strength of this liquor is gradually augmented till it reaches its first state. The skins, after remaining fifteen days in the liquor, are put again in the vats of gallic acid, and boiled bark of oak, as at first, then in weak tar liquor; they are then withdrawn, and steeped in the vats three or four times daily, during the first fortnight; they are then shifted into bucking tubs, containing liquor of its full strength; they are taken out, and again steeped two or three times daily, until they are well soaked in the liquor.

The skins, having reached this state, are put into a vat of warm water during half an hour; they are afterwards taken up, and placed upon a table of marble, resembling

those used by curriers to thin their skins, upon which they are brushed, washed, and cleaned, on the flesh and grain sides, three or four times a day, during the last week that the skins remain in the liquor. This operation being ended, the skins are put, during a week or more, according to their thickness, and the use they are intended for, into a vat of warm liquor of bark, or sumac liquor, and, when taken out of this vat, they are dried in the usual manner.

*Preparation of Hides for Sole Leather.*

Hides intended to make sole leather, must, like the preceding, be haired, fleshed, and worked, as usual, upon the marble table; they are then put, for several days, into a cold vat of gallic acid, and of boiled oak bark; after this preparation, they are taken out and steeped in the manner indicated for glossy leather, and they are put into bucking tubs, containing a weak, warm, soot liquor, about one-third or one-half as strong as at first. The skins are alternately taken out and put into this weak liquor, three or four times, daily, for more than a fortnight; they are afterwards taken to a bucking tub, containing warm liquor in full strength, taking care to steep them in this liquor three or four times a day, until they are thoroughly impregnated; they are then dried, and steeped about half an hour in a vat containing warm water; after this, they are placed upon a marble table, on which they are cleaned, washed, and brushed, three or four times, both upon the grain and flesh sides. The skins being thus prepared, a strong and warm liquor of oak bark is made, and in this they are steeped three or four times, daily, until the operation is completed. Care must be taken to dry the skins every time they are steeped in this last named liquor.

*Process of Tanning Hides with Soot and Tar Waters.*

BY THOMAS ASHMORE.

1st. In the process, may be used every kind of soot, produced either by the combustion of bones, and other animal matter, or by that of wood, turf, or other vegetable substance—or by the combustion of tar, pit-coal, and other bituminous products:

2d. Of oils, and other empyreumatic liquids, produced by the distillation of various animal, vegetable, and bituminous matters:

3d. Of every kind of empyreumatic gas produced by the combustion, or the distillation, of vegetable, animal, or bituminous substances:

4th. Of every liquor with which the gases above mentioned have been washed, or with which they have been in contact.

*Preparation of Soot and Tar Waters.*

Soot Water.—The soot from the upper part of the chimney only should be made use of, as it is of better quality, and very preferable to that which is formed in the lower part.

With one hundred pounds of soot, are mixed three pounds of quicklime; this mixture is put into a large tub, provided with a stop-cock, and having a double bottom; the soot and lime are mixed with a little cold water; then boiling water is poured on, until the two waters amount to about forty-eight gallons; the whole is left to settle twenty-four hours; after which, as much of this liquor as can be obtained, is drawn from below into a vat, or other vessel. The soot is again mixed with a fresh portion of quicklime and warm water, in which four pounds of sal-ammoniac are dissolved. This liquor, after remaining twenty-four hours, is drawn off as before, and the same process is continued as long as the soot will yield a liquor whose value will cover the expense.

The liquors thus successively obtained, as above, may be mixed together, or the weakest may be used in place of pure water, with fresh quantities of soot and quicklime, according to the strength wished for in the liquor; and even the first liquor, which is the strongest, may be rendered, if desirable, still stronger.

Tar Water.—To every ten pounds of quicklime, the same weight of water is added, to reduce it to powder; twenty-four pounds of vegetable tar are also added; the whole is then worked, so as to form a complete mixture. Then pour on about 120 gallons of boiling water, in which have been previously mixed, or melted, twenty-four pounds of sal-ammoniac. This mixture, stirred several times, and after remaining twenty-four hours, is separated from the settlings, and furnishes the tar water, which may be used.

*Observations on the two preceding Liquids.*

Tar water and soot water may be made by the simple infusion of tar or soot in warm water, and these liquors will convert skins into leather, but they will be too weak for

many uses. A stronger liquor may be obtained by making use of quicklime and water, but the strongest liquor is that which is made with quicklime and sal-ammoniac.

*Preparation of Leather with these Liquors.*

To prepare leather with these liquors, the hair is taken from the skins, and they are worked in the usual manner; then, instead of putting the skins into vats, as the tanners do, they are placed in a large tub, in which they are covered with soot or tar water, which has been rendered clear by filtering through sand, or some other filter; the skins are left, during twenty-four hours, in the liquor; they are then transferred to a tub of quicklime and water, for twelve hours; after this they are again put into the tar or soot water; and they are changed from one tub to the other, until they have acquired, internally, a deep brown color.

The time necessary for this operation depends on the thickness of the skins, the strength of the liquor, the temperature, and other variable causes.

The skins, after having undergone this preparation, are taken out of the liquor, and exposed to a current of air, to dry them; they are then replaced in the soot or tar water, in which they remain forty-eight hours, at most; and coming out of this water, they are immediately put, during an hour or two, into the water of quicklime, and removed alternately from the liquor to the lime-water, until they are completely converted into leather; finally, they are finished in the usual manner.—*Jour. des Connais. Us. et Prat.*

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*Method of Making Soap from certain Animal Substances.*

In manufactures, the refuse matter should be turned to account as far as possible. We propose, in the present article, to give directions for making a soap with the refuse matter of wool, cloth, &c.

It is well known that, when wool is combed and prepared for spinning, small parts of it escape, and that in fulling and shearing cloth, also, small parts are separated. These scraps should be collected, to extract from them a soapy substance, which, notwithstanding its softness and fluidity, is very fit for fulling and whitening. The following is the method of preparing it.

Begin by making a strong ley of wood ashes, and add to it one-tenth of lime; pour on it warm water, until an egg will swim on the water, above the ashes; leave this mixture to settle for twenty-four hours, or more, if requisite, keeping the ley at the temperature of about 60° Fahr. Pass this ley through a kind of sieve, made of tin plates, with a layer of straw, to prevent the ashes from passing with the ley. Pour this ley, when boiling, upon the particles of wool, at the same time stirring and boiling it carefully; and place this new mixture on the fire, to be there boiled a second time. The soapy substance begins very soon to thicken. Throw in particles of wool, until the ley is saturated with them, and ceases to take a grayish green color.

The coarse parts of the shearing of cloths, and the hair of all kinds of animals, are not so readily converted into a soap as the pickings of the combing and spinning of the wool. Thus, when the former are to be used, they must be boiled in a much stronger ley; when it is perceived that the ley is perfectly saturated with wool, and that it no longer changes it into soap, the operation is finished. After cooling, a soft and gelatinous soap is found at the bottom of the kettle, well adapted to various uses.

*Observations.*

1st. The stronger and hotter the ley is, the more powerfully it acts upon the wool, and the quantity of soapy matter obtained from it will be increased; on the contrary, a weak ley will disengage only a part of the oily matters of the wool, and produce a less perfect soap.

2d. To obtain the same kind of soapy substance, shreds of cloth, and other woollen stuffs, may be used; also, hair of all kinds; but in the use of this latter, a much stronger ley is necessary.

3d. When clean and pure substances are used, the soap produced from them is finer, and of better quality. It is therefore necessary to clean the pieces of wool intended for this use; they are to that end washed in river water, to free them from all impurities they may have contracted in manufacturing.

4th. If to the mixture in the kettle, common salt is added, as is practised in the soap factories, the soap will be thicker and firmer.

5th. In case of want of care and attention, dirty or dyed wools are used, the soap will have a dirty tinge, and will give the cloths a grayish color. This is of small consequence in cloths of deep colors, but for

white cloths, it is requisite that the soap be drawn from white wools.

6th. Stuffs of deep-colored wools, when a soap not well managed is used, imbibe a disagreeable odor, which is dissipated when the stuffs are washed, and dried in the air.

7th. Soap prepared in this manner may be used with the same advantage in the manufacture of muslins, cotton cloths, and other cotton fabrics; it may be used in place of common soap, in preparing stuffs before dying. The gray tint they then take is not injurious, but becomes of advantage to them in certain colors, because stuffs of cotton then become more susceptible of receiving the color that it is wished to give them.

8th. If fat substances are added, or waste oil, or grease, the soap is more oily, firmer, and dissolves more readily. We know of a large factory, where no other soap is used.—*Ibid.*

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### *Suabian Method of Bleaching Spun Cotton and Hosiery.*

We have just received from a Strasbourg correspondent, the description of a peculiar method of bleaching cotton yarn and hosiery, used in Suabia. The operation is very quick, being completed in two days; there is no necessity of a place of great extent—a wash-house is large enough; and in this respect, as well as the advantage of being practicable at all seasons, this process becomes interesting to small manufacturers, who cannot go to the expense of a regular bleaching establishment. Furthermore, the manipulations are few, and the workmen can, in a very short time, require the routine requisite to bleach with certainty.

A caustic alkaline ley is prepared in the following manner: two measures of quicklime are put in a pile in one corner of the workshop, taking care that the walls against which the lime is placed are neither planked nor boarded. The lime is then covered gradually with ten measures of good ashes, which are spread equally over it, passing them through a sieve; this heap is sprinkled with water between every layer of ashes, and the cracks produced by the heat and motion in the mass, stopped with wet ashes. As soon as the lime is slacked, and this doughy mass entirely cooled, it is fit to form the ley.

The ley wash is formed by mixing this paste with cold water, then decanting the floating liquor, and lixiviating until no more alkali can be obtained; this liquor, which becomes of a fawn yellow color, ought to be of a specific gravity of about ten to fifteen degrees of the areometer of Baume, (1.07 to 1.11.)

For this operation, as well as for all bleaching, a soft water must be chosen, hard water producing frequent failures.

Skeins of cotton are taken, and being carefully untwisted, are tied in hanks, or bundles, to be immersed in the cold caustic alkaline wash; they are left in it during six hours, changing them from time to time.

The ley drained off is put aside, to be employed in a second washing, or for other uses.

The skeins are rinsed in river water, when taken out of the ley. After the rinsing, they are boiled in a bath of the same ley in which soap has been dissolved, in the proportion of six pounds to every seventy pounds of cotton, and ley in proportion, in order to clean them; this bath is kept boiling during twelve hours, in a copper kettle, which must be carefully cleaned after every operation. During the boiling, the cotton must be stirred about, to prevent that which is in contact with the bottom of the kettle from burning, and to distribute the boiling equally through all the skeins. After coming out of the kettle, the cotton is again washed in river water.

The fifth manipulation is boiling in water without ley; the same proportion of soap is always used, viz., six pounds of soap, for seventy pounds of cotton, or hosiery; after cleansing the kettle well, river water is poured in, and the hanks or bundles are stirred about as before, and for the same length of time. Finally, the cotton is washed for the last time in river water, and then dried in the open air, upon the grass. In cold weather, the use of the grass drying may be dispensed with, and the cotton, &c dried in a stove. It has been observed that the quicker it dries, the whiter it becomes. It is presumed, in all these manipulations, that the person who stirs the skeins of cotton, will be careful, and skilful enough, to avoid entangling the threads of the skeins. —*Ibid.*

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[From the Journal of the Franklin Institute, for Jan. 1835.]

Monthly Conversation Meeting.—The second conversation meeting of the Institute, for the season, was held at their Hall, Oct. 23d, 1834.

Messrs. Carr & Lunt exhibited a variety

of articles, of excellent workmanship, or of ingenious construction, consisting of a ship's windlass, invented by Walker & Badger, of Portsmouth, New-Hampshire; two rack wrenches, manufactured by H. Foote & Co., of Springfield, Mass.; specimens of manure forks, from the same manufactory, remarkable for their excellent temper; and samples of wood screws, by J. G. Pierson & Brothers, of New-York—beautifully finished articles, which were pronounced by persons, who are in the practice of using them, as equal to the best specimens ever exhibited in this country.

Mr. L. Hammond, of Middletown, Connecticut, showed a safety door lock; the letter principle being applied differently from the similar one in Perkins' lock. The bolt is secured by tumblers inside, and can be released by drawing some of a series of pins, of which there are twenty-four, marked with the letters of the alphabet. The lock may be set to any letter or word, and can be locked, or unlocked, only when the pin, or pins, corresponding to that letter, or word, are withdrawn.

Mr. Joseph Nock, of Philadelphia, brought forward a safety chest lock, which was admired for its ingenuity and workmanship.

Prof. A. D. Bache presented to the meeting, in the name of Mr. Thomas Ewbank, of New-York, a metallic syphon, of the form described by Mr. Ewbank, in the Journal of the Institute, vol. xiv. p. 367, and showed its application as a cock, or as a gauge, pursuant to the views of the inventor.

A galvanic battery of four elements, the invention of Mr. John W. Draper, of Christiansville, Virginia, was exhibited, and its decomposing powers illustrated. This battery is described in the Journal of the Institute, vol. xiv. page 289; and the conditions of most powerful action, as determined by the inventor, were stated by Prof. A. D. Bache.

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### *Report on Mr. J. D. Woodside's Revolving Harrow and Seed Cart.*

The Committee on Science and the Arts, Report:—That having examined a model of the machine, and inspected numerous certificates of its performance, which have been given by agricultural gentlemen, they are of the opinion that this is a valuable improvement in that necessary implement of husbandry, the harrow.

Some of the committee were present during a trial of one of these machines, the result of which was highly satisfactory. It seemed on that occasion to require more power to move it than the common harrow; but its superior efficacy in eradicating weeds, and pulverizing the soil, will, it is believed, more than compensate for this difference, as it will certainly do more work at one operation, than the common harrow will at two or three.

Another advantage which it possesses, is, that it is not so liable to be clogged or choked by weeds, and clods of earth, as the common harrow. These are collected by the latter; and wherever the harrow is raised to clear it of them, there remains a heap of rubbish, which impairs the evenness of the field, and injures the crop.

The committee have not had an opportunity of seeing the seeding apparatus in operation; but from an inspection of it, they believe it will be found to answer very well for smooth and heavy seeds, such as clover seed, and wheat or rye, as it will, if properly regulated, distribute them more evenly than can be done by hand.

Accompanying this report, is a description of the machine, which has been furnished by the inventor.

By order of the Committee.

WILLIAM HAMILTON, *Actuary.*

*Oct. 9th*, 1834.

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### *Report on Mr. John Pierpont's Fireplace.*

The Committee on Science and the Arts, Report:—That the stove, or grate, under consideration, claims to furnish, according to the words of the patentee in the specification, "a new and useful method of warming and ventilating rooms, by burning anthracite, or other coal, in an open and portable fireplace, or stove, which I call the DORIC FIREPLACE; which may be made in a variety of different forms, but in every form must be constructed and arranged upon the principle of *supplying to the room that is to be warmed and ventilated, in lieu of the air that, through the smoke flue, or chimney, passes out of it, and that by the operation of the fire itself—an equal quantity of fresh air from without the room, which, as it comes in, is warmed by being made to pass over or between the heated surfaces of bodies not metallic; or, if metallic, bodies that have not been brought into contact with a burning substance.*"

The apparatus is denominated the DORIC FIREPLACE, because the inventor has preferred to construct it with Doric columns, and to give to its other parts a form corresponding with that order of architecture, as represented in the plate herewith presented. It is observed, however, in the specification attached to the patent, which has been placed in the hands of the committee, that "although this simple form is preferred, from a belief that its beauty consists in its severe simplicity, it may yet be varied in this respect; and that the columns, or indeed any other part of it, may be ornamented with brass, polished steel, or other material, according to the taste of the manufacturer, or the purchaser, without departing from the principle upon which the fireplace is constructed."

Fireplaces and stoves have been frequently constructed, in which air from without the apartment to be warmed, is admitted to circulate between plates heated by the fire, and thence to pass into the room, to supply the place of that which passes through the fire, and up the flue; but the committee is not aware that this has been effected, without allowing the air so admitted to come in contact with metallic plates, heated by contact with the fire; the accomplishing of this object, is the characteristic feature of the Doric Fireplace.

The stove, with the exception of the lining, is, in preference, constructed entirely of cast-iron; but the fuel, which is contained in an open grate, is not in contact with the metal, excepting with that portion of it which constitutes the grate bars. The back and ends of the chamber of combustion are formed of fire-brick, moulded for the purpose. This fire-brick is kept, by suitable ledges, from contact with the metallic plates which form the shell of the stove, so that the air admitted from without, may pass up freely between the two, and enter the room through fret-work openings in the top plate, or other convenient apertures. In the specification, very particular directions are given respecting the form, and the mode of uniting the different parts; but of these it is unnecessary to give a detail in this report, as they may be varied in numerous ways, without affecting the principle upon which the main dependance is placed. A point of the highest importance in putting this stove together, is, to render the junctures perfectly air tight, that there may be no admixture of the gaseous products of combustion, with the heated air by which the room is to be ventilated; the danger of this has, it appears by the testimony of those who have used it, been effectually guarded against, by the skilful manner in which the junctures are made; so that, with ordinary care, a good mason will not fail in the setting it in a proper manner.

Your committee was apprehensive that, from the imperfect conducting power of fire-brick, but a small portion of heat would be communicated to the cold air admitted from without; but they are assured by one of its members, who has had a fireplace of this desription in use for a considerable period, that soon after lighting the fire, the air flows in through the proper apertures, as highly heated as is either desirable, or safe; whilst it does not, even when the fire is most intense, undergo that deterioration which is always produced by highly heated metallic surfaces.

From an examination of the stove itself, with the addition of the testimony before them, your committee are of opinion that it is well calculated to fulfil the intentions of its inventor—namely, the introduction of a sufficient quantity of air to ventilate the room, which air is first rendered warm by a portion of that heat which, in grates of the ordinary construction, is entirely wasted.

By order of the committee.

WILLIAM HAMILTON, *Actuary.*

*November 13th*, 1834.

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[From the American Journal of Science and Arts.]

PAPYRUS.—Enclosed you will find a small sheet of papyrus, manufactured from plants growing in the neighborhood of Syracuse, in Sicily. One of my first excursions among the numerous interesting objects that lie about this city, was to the papyrus region; and on the whole, I was highly gratified.

The harbor of Syracuse is large, and its upper end is lined with low marshy lands. Among these, winds a small river, or what we should call a very small creek; and on the banks of this, about two miles from its mouth, the papyrus commences. We had been forcing our boat along the stream with considerable labor, sometimes entangled among the weeds, and sometimes having to lie down to enable it to pass among the overhanging canes, when we suddenly came to a clearer space, and saw, at the head of

it, a clump of the plants of which we were in search. They are in every respect very pleasing objects. The roots are from three to four inches in thickness, tortuous and knotty, sometimes running into each other, and forming a thick matted mass, which often extends several feet into the stream: they are tolerably woody and hard, and from their lower part send out a number of fibres, which keep them more firmly attached to the soil: except in size, there is a considerable resemblance between them and the root of our calamus,* or water-lilly. At the extremity of each root rises a stem, which, when full grown, is about ten or twelve feet in height; it is triangular, (the corners rounded,) and without any joint, the rind or bark being perfectly smooth throughout the whole length; the periphery, at the lower part, is about eight inches; from this it tapers gradually to the upper end, where it is not more than from a half to three-quarters of an inch in thickness. At the top, it carries a thick tuft of pedicles, somewhat resembling coarse grass thrown out like the top of a parasol, each pedicle being from fifteen to eighteen inches in length, triangular, and at about eight inches from the stem divided into three smaller pedicles, also triangular. At the point of division, is a small red flower, guarded by small sheaths or leaves, also of a reddish color. At the foot of the stem, and fitting close to it, are a number of what may be called reddish leaves; they appear, however, to be the remains of the sheath that protected the plant when yet tender: the same thing occurs, also, at the top or point from which the pedicles spring. The color both of the stalk and pedicles is a dark green: they grow in clumps of from ten to thirty feet in diameter: the stalk is slightly curved by the weight of its tuft, and the smooth surface and graceful tossing figure of the former, with the spread and fulness of the latter, produce together a very good effect. In the sketch enclosed, the stalks are arranged so as to show the tufts, and not in thick clumps, according to the reality.

I have said that the exterior consists of a rind or bark without any joint: it encloses a pith, watery and spongy at the bottom, but becoming firmer as we ascend. From this *pith*, the enclosed specimen has been formed. The only book within my reach, that treats on this subject, states, on the authority of Pliny, that the ancients, in making paper, used the coats, or pellicles which form the covering for the pith. If this authority were not of so high a character, I should have said that it was impossible to make paper, or any thing of that nature, from any part of the bark or rind. The stalk appears to consist only of two substances, the pith noticed above, and a covering, very much resembling that of a stalk of Indian corn. I attempted several times to divide this coat into parts, and to flatten and make something like paper from it, but never could succeed. It would split up immediately into narrow shreds, and, from the want of cohesion in the parts, I was forced to relinquish the attempt. Seignor Vincenzo Politi, a Syracusan gentleman of considerable antiquarian research, manufactures, and sells to the curious, paper from the plant, but it is always made from the pith. The enclosed is some of his making, and, from a close examination which I have subsequently made of a vast number of specimens of ancient papyrus, in the museums from Naples to London, I have no hesitation in saying that they were formed of exactly the same material, and in the same way.

Mr. Politi, in cutting the plant, rejects the upper part as too narrow, and the lower as too spongy; he divides the remainder into pieces of from eight to twelve inches in length, and stripping off the bark, slices the pulp longitudinally, by means of a sharp knife, into slices about a sixteenth of an inch in thickness. These are placed under a roller, and, when they are pressed very thin, a sheet is formed by joining the strips, making the sides of the adjoining pieces overlap a little. If he wishes to make the paper strong, one sheet is laid crosswise over another, and cemented with the same paste employed in uniting the strips. If you will try, on the piece enclosed,* you will find that you can write on it with a blunt pen without difficulty; and even in our day, it would form no despicable paper.

* That is the Pennsylvania name: I believe that in New-England you have another for this plant.

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[From the American Journal of Science and Arts for January 1835.

LARGE MASS OF NATIVE COPPER.—The cabinet of Yale College has been recently enriched by a magnificent piece of native copper, presented by MR. J. MORTIMER

* The small sheet of prepared papyrus transmitted to us, bears, on one side, colored figures of the plant, and on the other, neat well defined writing.—ED.

Catlin, of New-York. In a letter to the editor, dated October 9, 1834, Mr. C. mentions that this piece of copper was found at or near the river On-ta-naw-gaw of lake Superior; and, as we are informed, above the rapids marked on the map of the river. Those who brought it away, were allured by the vain hope of finding in it gold or silver. Its weight was one hundred and thirty-seven pounds, but is now somewhat less, as a few ounces have been detached. It has all the characters of native copper; the perfect color and lustre of that metal; the occasional incrustation with green carbonate of copper; numerous rudiments of crystals of copper with triangular faces; occasional cavities, swellings and knobs, and great malleability. Its form is rudely plano-convex, with an irregularly elliptic base, arched below, and standing upon two projections, thus allowing it a rocking motion; it is fifteen inches long and fifteen broad—in the narrowest place twelve inches; it is nine inches high, and it bears strong marks of having been entangled in a vein stone, or a rock. Mr. Catlin has been credibly informed, that "there lies in the bed of the On-ta-naw-gaw a mass equally pure, weighing a ton!"

Whether this is the celebrated copper rock described by Mr. Schoolcraft, vol. iii, p. 205 of this Journal, we have no means to determine, but the numerous and important facts mentioned by Mr. Schoolcraft, render it certain, that native copper is frequently found in that region, and lead to a strong presumption of the existence of valuable mines of copper.

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Great Mass of Meteoric Iron from Louisiana.—The history of this iron was given in vol. viii, at p. 218 of this Journal. The first notice of it was published in Dr. Bruce's Journal in 1810, and it was there stated that it contained no nickel; a subsequent examination by Professor Silliman detected that metal, and a more exact analysis by Mr. Charles U. Shepard ascertained the existence of 9.67 per cent. of nickel in this very remarkable mass. See this Journal, vol. xvi, p. 217. It was, for many years, deposited in trust, in the Museum of the Lyceum of New-York, by the late Col. Gibbs, who had early purchased the specimen. That gentleman's lamented death was mentioned in this Journal, vol. xxv, p. 214. Recently, his respected lady, Mrs. Laura Gibbs, with the approbation of those concerned, has generously presented this magnificent mass to the cabinet of mineralogy of Yale College, thus causing it to be associated with the splendid collection, the Gibbs Cabinet, which was amassed by the labor and munificence of him whose name it bears, and to whose memory, we trust, it will long continue to do honor. In this collection, unrivalled tn the United States, and surpassed, in few other countries, the Meteoric Iron of Louisiana is, without doubt, the most important specimen.

A more particular notice of it may be given on another occasion. Its length is three feet four and a half inches, its greatest breadth, two feet four inches, and its greatest height, sixteen inches. Its weight is sixteen hundred and thirty-five* pounds, being more than that of the mass found by Professor Pallas in Siberia, which is now in the Imperial Museum at St. Petersburgh.

The Gibbs Meteoric Iron, is, therefore, the largest piece in any collection in the world, although there are masses many times larger lying in the wild regions of Mexico and Peru, and perhaps elsewhere.

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Soapstone or Steatite, of Middlefield.—This very useful material is found in many places in our primary regions. Middlefield, in Massachusetts, eighteen miles from Northampton, has long been known as affording it in abundance. A new quarry has been recently opened there, by Mr. William H. Butler, from whom we have received slabs and fragments. The quality is excellent, the substance is principally compact talc, and it is, (as far as we can judge from the specimens sent us,) remarkably free from foreign minerals. It gives a surface of uniform level and finish, and is cut with great ease. When varnished, fine colors are brought out, not unlike those of the Verd antique marble of Milford, near New-Haven, but less vivid. It is, however, sufficiently handsome to be used for the facings of fireplaces.

We should be glad to receive information of all remarkable masses of soapstone in this country, that we may contribute to make

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* The weight was reported in Dr. Bruce's Journal, to be over three thousand pounds, which exaggerated statement has been often repeated, and was probably derived from the adventurers who brought it from the Red River.

them still further known. The utility of soapstone is immense, and is only beginning to be realized among us. It is an admirable building material—cut with almost as much ease as timber, and readily shaped to any form for utility or ornament; it is as handsome as granite and marble, and houses constructed of it would not be injured by fire, as it resists that powerful agent, even in furnaces,* for which it forms an excellent lining.

Anthracite furnaces, when lined with it, instead of fire-bricks, do not accumulate the slag and scoriæ, and the walls remain perfectly clean; this arises from the infusibility of the soapstone, which prevents the slag from adhering to it; the slag consists of the earthy and metallic impurities of the coal, which melt in the intense heat of the anthracite furnaces, and then adhesion takes place in consequence of the softening of the fire-bricks at their surfaces, where they are in contact with the slag. Soapstone, on account of its infusibility, is also an excellent ingredient in pottery and porcelain; and magnesia, which is its characteristic ingredient, may be extracted from it by very easy chemical processes.

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### *The Asclepias Syriaca, or Milk-Weed, a Substitute for Flax, &c.*

Salem, Mass., Dec. 10, 1834.

To Professor Silliman:—*Sir*,—Some information on the article inserted in a late No. of the American Journal, styled a "substitute for linen," being inquired for, it is with pleasure given.—The plant there referred to, is the Asclepias Syriaca, or common silk or milk-weed—and the material itself, is the exterior and interior barks; the exterior, however, is considered of the most importance. If the structure of this plant be examined, the body of it, when in full growth, will be found to envelop three sets of fibres, two of which are contained in, and in fact constitute the barks; the third set adhering to and covering the stem, being of no value, is not patented. This invaluable plant grows spontaneously, abounds throughout this country, and, being a perennial, would not require, as flax, hemp, cotton, &c., &c., to be renewed annually, but with a top dressing, it is said, it would yield abundantly for many years. In all my researches among trees and plants in pursuit of a vegetable silk, none have been observed to compare with this, for beauty, strength, and abundance of fibre and milk—to which it probably owes its superiority of strength and beauty, over every other known fibre. This new and beautiful material, so very valuable for the many purposes to which it can be applied, we cannot but hope will receive attention; for we are not prepared to believe that it is destined to linger, from century to century, as was the case with some of the most favored fabrics of the present time, in consequence of the darkness of the age in which they were produced. When a whole nation, and that the most enlightened then on earth, could not be induced to believe in, or profit by the discovery of one of them, its consequent slow progression through many subsequent ages to the present unrivalled state of perfection to which it has attained, need not occasion surprise. Neither would it be deemed extravagant in us, perhaps, considering the present advanced state of knowledge, should we venture to predict that the fibres of the asclepias will rank among the most favored fabrics of the present day, if they do not wholly supersede some of them.

Very respectfully,
Yours,
Margaret Gerrish.

It is worthy of remark that the milk of the plant above named, contains a quantity of caoutchouc or elastic gum, which, at our suggestion, was extracted, some years since, by Dr. Grosvenor, of the Medical Institution of Yale College, who made this plant the subject of his inaugural dissertation.—Ed.

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Culture in the Air.—Mr. Pentland stated, at the famous Edinburgh congress of philosophers, that rye, potatoes, maize, kidney beans, and even the barley of the old world, are raised in abundance upon the shores and islands of the lake Titicaca, at an elevation of 12,760 feet. He also stated that he discovered about this lake an immense number of tombs, hundreds of which he entered and examined. They were monuments of grand design and architecture, resembling Cyclopean remains, and not unworthy of the arts of ancient Rome or Greece.—*Scientific Tracts and Family Lyceum.*

* It is said however not to stand in the furnace for smelting iron.